

U.S. Patent Application Serial No. **10/502,058**
Amendment filed September 5, 2006
Reply to OA dated May 5, 2006

REMARKS

Claims 1,11-15, and 17 have been amended in order to more particularly point out, and distinctly claim the subject matter to which the applicants regard as their invention. The applicants respectfully submit that no new matter has been added. It is believed that this Amendment is fully responsive to the Office Action dated **May 5, 2006**.

Figs. 1A and 1B are objected to because the y-axis label is absent.

The y-axis label of Figs. 1A and 1B have been labeled "Abundance."

It is respectfully requested that this objection be reconsidered and withdrawn.

Claims 1 and 11-15 are objected to because of informalities.

In accordance with the Office Action's helpful suggestions, the claims 1 and 11-15 have been amended as follows:

- Claims 1 and 11-14: the term "color" has been amended to "coloring agent"
- Claim 15: the phrase "claims 1" has been amended to "claim 11"
- Claims 12 and 14: the claims have been amended to include a period

It is respectfully requested that this objection be reconsidered and withdrawn.

Claims 1-17 are rejected under 35 USC 103(a) as being unpatentable over Yasuda, et al. (JP59-223756).

Yasuda discloses a method for producing anthocyanin pigment comprising the steps of passing a purple corn coloring agent extract solution through an absorption resin, and washing the absorption resin with water.

The Office Action concedes that **Yasuda** does not disclose the claimed limitation of a desorption solution between 25 to 45% v/v or 28 to 45% v/v hydroalcoholic solution, but asserts that this limitation would have been obvious to one of ordinary skill in the art at the time the invention was made. In particular, the Office Action asserts that the desorption step of using 2 parts of 58% volume ethyl alcohol as taught by **Yasuda** would also lead to the pigment being desorbed from the resin absent unexpected results.

However, contrary to the Office Action's assertions, the Comparative Preparations show that, in the present invention recited in claims 1-17, the desorption solution is necessarily limited 25 to 45% v/v or 28 to 45% v/v hydroalcoholic solution in order to achieve the unexpected results shown in Experiments 1 and 2, namely that the specific range of 25 to 45% v/v hydroalcoholic solution is necessary to achieve odorless or low-odor purple corn coloring agent free of fumonisins. (Specification, p.24, 29; Table 1). More specifically, limiting the % v/v of hydroalcoholic solution during desorption to 30 to 40 % v/v, and less than 50% v/v, produces the unexpected result of fumonisin-removal and odor-removal.

Experiment 1 compares the fumonisin content of two purple corn color preparations: Example 1 (Invention Preparation) and Comparative Preparation. Example 1 was obtained by passing a purple corn color extract solution through an adsorption resin, and desorbing a purple corn color from the resin using 30% v/v hydroalcoholic solution. On the other hand, the Comparative Preparation was obtained in the same manner except for using 50% v/v hydroalcoholic solution. The comparison of the two preparations in Experiment 1 shows that while no fumonism (0 ppm) was detected in Example 1, 3 ppm of fumonism was detected in the Comparative Preparation. (Specification, p. 22-24). Since the % v/v of the hydroalcoholic solution used during desorption was the only difference between the two preparations, Experiment 1 clearly shows that the resulting difference in fumonism removing effect is directly attributable to limiting the hydroalcoholic solution to 30% v/v, and less than 50% v/v.

Similarly, Experiment 2 further illustrates that limiting the hydroalcoholic solution to 30 to 40% v/v achieves the unexpected result of odorless or low-odor purple corn coloring agent. In Experiment 2, Example 2 (Invention Preparation) was obtained by adsorbing a purple corn color extract solution onto an adsorption resin, and eluting a purple corn color with 30 to 40% v/v aqueous ethanol solution, while the Comparative Preparation was obtained by eluting a purple corn color with aqueous solution containing ethanol concentration of 50% v/v. The results reported in Table 1 show that while Example 2 resulted in total odor removal, the Comparative Preparation continued to exhibit odor even 30-days after storage. (Specification, p.29, Table 1). Again, since the % v/v of the hydroalcoholic solution used during desorption was the only difference between the two

U.S. Patent Application Serial No. 10/502,058
Amendment filed September 5, 2006
Reply to OA dated May 5, 2006

preparations, Experiment 2 clearly shows that the resulting difference in odor removing effect is directly attributable to limiting the hydroalcoholic solution to 30 to 40% v/v, and less than 50% v/v.

In other words, when hydroalcoholic solution having an alcohol concentration of 50% v/v or more is used as a desorption solution, the fumonisin-removing and odor-removing effects of the present invention recited in claims 1-17 cannot be achieved. Accordingly, contrary to the Office Action's assertion, a desorption step of using 2 parts of 58% volume ethyl alcohol as taught by **Yasuda** does not achieve the results of the claimed invention.

Yasuda fails to render obvious the present invention recited in claims 1-17 because the unexpected results of fumonisin-removal and odor-removal effects achieved by using the claimed amount of 25 to 45 or 28 to 45% v/v hydroalcoholic solution is unique to that amount, and cannot be achieved by using hydroalcoholic solution in 50% or more v/v or, more specifically, 2 parts 58% volume of ethyl alcohol as taught by **Yasuda**. Therefore, the amount of ethyl alcohol disclosed in **Yasuda** fails to teach or suggest the claimed invention.

It is respectfully requested that this rejection be reconsidered and withdrawn.

In view of the aforementioned amendments and accompanying remarks, claims 1-17, as amended, are in condition for allowance, which action, at an early date, is requested.

If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact the applicants undersigned attorney at the telephone number

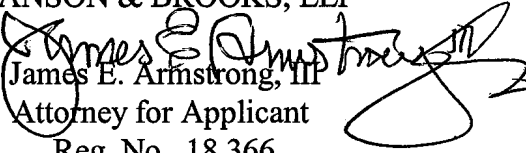
U.S. Patent Application Serial No. **10/502,058**
Amendment filed September 5, 2006
Reply to OA dated May 5, 2006

indicated below to arrange for an interview to expedite the disposition of this case.

In the event that this paper is not timely filed, the applicants respectfully petition for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

ARMSTRONG, KRATZ, QUINTOS,
HANSON & BROOKS, LLP


James E. Armstrong, III
Attorney for Applicant
Reg. No. 18,366

JEA/gia
Atty. Docket No. **040370**
Suite 1000
1725 K Street, N.W.
Washington, D.C. 20006
(202) 659-2930



23850

PATENT TRADEMARK OFFICE

Enclosures:

Q:\FLOATERS\GAN\04\040370\040370_amendment_080506